

## Abstract

Disclosed are a reactor and a method for processing hazardous gas, capable of improving a removing rate of the hazardous gas and the selectivity of a reacting process using a dielectric heat produced by a non-thermal plasma and a catalyst at a process of decomposing the hazardous gas. The reactor comprises a body having an inlet and an outlet; a plurality of planar electrodes arranged parallel in the body and spaced apart from each other at a certain interval, in which the plurality of planar electrodes are alternately connected to an alternating current power, and a ground such that every other planar electrode is connected to the alternating current power and the remaining planar electrodes are connected to the ground; and a power supply unit for applying a voltage of an alternating current frequency to the planar electrodes.

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